

Claims

What is claimed is:

Sub A1
1. A thermoplastic adsorbent composition comprising an adsorbent component dispersed in a thermoplastic organic matrix, said matrix containing a wax component and a thermoplastic resin component, said composition containing at least about 15 wt.% of said adsorbent component based on the total weight of the composition, said composition containing at least about 2 wt.% of said wax based on the combined weight of said wax and said thermoplastic resin, said wax having a weight average molecular weight of about 800 - 10,000, and said thermoplastic resin having a weight average molecular weight greater than 10,000.

2. The composition of claim 1 wherein said composition has an apparent viscosity of about 3×10^6 cP or less measured according to ASTM test D-3236-88 at 124°C and 0.125 sec⁻¹ shear rate.

3. The composition of claim 1 wherein said composition contains at least about 55 wt.% of said adsorbent component.

a 4. The composition of claim 2 wherein said composition contains about 57-65 wt.% of said adsorbent component.

5. The composition of claim 1 wherein said wax is selected from the group consisting of olefin-containing polymer waxes and mixtures thereof.

6. The composition of claim 1 wherein said wax has a weight average molecular weight of about 1000-8000.

7. The composition of claim 2 wherein said apparent viscosity is about 2×10^6 cP or less.

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8. The composition of claim 1 wherein said adsorbent component includes an adsorbent selected from the group consisting of zeolites, silica gels, activated carbons, silica aluminas, non-zeolite molecular sieves, and mixtures thereof.

9. The composition of claim 8 wherein said adsorbent component includes zeolite 3A.

10. The composition of claim 9 wherein said adsorbent component further includes a zeolite 13X.

11. The composition of claim 10 wherein said composition contains about 10 wt.% or less of zeolite 13X.

12. The composition of claim 1 wherein said thermoplastic resin has a weight average molecular weight of about 30,000.

13. The composition of claim 1 wherein said thermoplastic resin is selected from the group consisting of olefin-containing polymers and mixtures thereof.

Sub A2

14. An insulating glass unit comprising at least two panes of glass and a spacer element which together define an enclosed space within said unit, said unit being characterized by the presence of a thermoplastic adsorbent composition in communication with said enclosed space, said thermoplastic adsorbent composition comprising an adsorbent component dispersed in a thermoplastic organic matrix, said matrix containing a wax component and a thermoplastic resin component, said composition containing at least about 15 wt.% of said adsorbent component based on the total weight of the composition, said composition containing at least about 2 wt.% of said wax based on the combined weight of said wax and said thermoplastic resin, said wax having a weight average molecular weight of about 800 - 10,000, and said thermoplastic resin having a weight average molecular weight greater than 10,000.

15. The insulating glass unit of claim 14 wherein said thermoplastic adsorbent composition has an apparent viscosity of about 3×10^6 cP or less measured according to ASTM test D-3236-88 at 124°C and 0.125 sec^{-1} shear rate.

16. The insulating glass unit of claim 14 wherein said thermoplastic adsorbent composition is adhered to said spacer element.

17. The insulating glass unit of claim 14 wherein said thermoplastic composition contains at least about 50 wt.% of said adsorbent component.

18. The insulating glass unit of claim 17 wherein said thermoplastic composition contains about 57-65 wt.% of said adsorbent component.

19. The insulating glass unit of claim 14 wherein said wax is selected from the group consisting of olefin-containing polymer waxes and mixtures thereof.

20. The insulating glass unit of claim 14 wherein said wax has a weight average molecular weight of about 1000-8000.

21. The insulating glass unit of claim 14 wherein said adsorbent component includes an adsorbent selected from the group consisting of the group consisting of zeolites, silica gels, activated carbons, silica aluminas, non-zeolite molecular sieves, and mixtures thereof.

22. The insulating glass unit of claim 21 wherein said adsorbent component includes a zeolite 3A.

23. The insulating glass unit of claim 22 wherein said adsorbent component further includes a zeolite 13X.

24. The insulating glass unit of claim 23 wherein said composition contains about 10 wt.% or less of zeolite 13X.

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25. The insulating glass unit of claim 15 wherein said apparent viscosity is about 2×10^6 cP or less.

26. The insulating glass unit of claim 14 wherein said thermoplastic resin has a weight average molecular weight of at least about 30,000.

27. The insulating glass unit of claim 14 wherein said thermoplastic resin is selected from the group consisting of olefin-containing polymers and mixtures thereof.

Add A3

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